DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-008787
Date Inspected: 02-Sep-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 1900
OSM Departure Time: 330
Location: Clackamas, OR

CWI Name:	Steve Barnett, Jon Nickolich			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Hinge-K Components

Summary of Items Observed:

Summary of Items Observed: On this date, Caltrans Quality Assurance Inspector (QA) Clete Henke was present at Oregon Iron Works, Inc. (OIW) in Clackamas, OR for observation of fabrication of the Hinge K Pipe Beams and related activities including in process welding and OIW Quality Control (QC) visual and nondestructive testing. The following observations were recorded:

OIW Fabrication Shop-Bay 3
Hinge-K Pipe Beam Base Assembly 102A-1:
a111-1 forging to a110-1 base plate
The QA Inspector observed no production activity on the assembly noted above for the duration of the shift. During conversation with QC Inspector Steve Barnett, the QA Inspector was informed that QC Magnetic Particle (MT) and Visual (VT) testing was substantially complete at 102A-4 stiffener to forging and stiffener to stiffener connections. The QA Inspector subsequently performed 100% Magnetic Particle (MT) and Visual (VT) verification at completed Partial Joint Penetration (PJP) and fillet connections at 21 random locations in excess of the 10% QA verification requirement. MT and VT verification was completed at various times during the shift at the following joints: W1-101, W1-102, W1-103, W1-104, W1-105, W1-106, W1-107, W1-108, W1-109, W1-110, W1-147, W1-148, W1-149, W1-150, W1-151, W1-152, W1-153, W1-154, W1-155, W1-156 & W1-157. Please reference TL-6028 report for this date for details.

Hinge-K Pipe Beam Base Assembly 102A-4:
a111-4 forging to a110-4 base plate
The QA Inspector intermittently monitored OIW welders Yuriy Bannikov (WID B61) and Phuong Huynh (WID

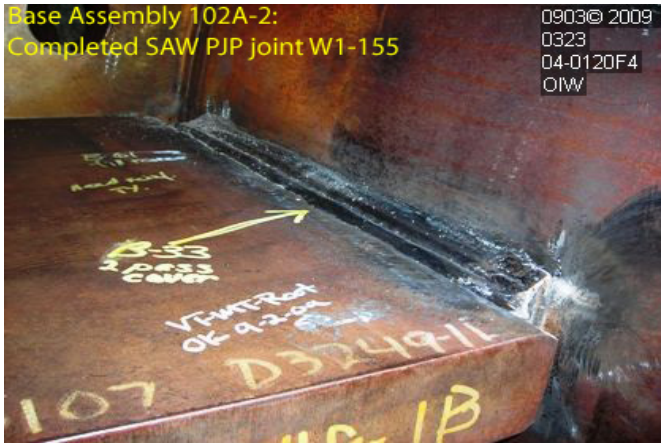
H4) on swing shift and Harold Baldonado (WID B33) on graveyard shift during in progress Submerged Arc Welding (SAW) at weld joints W1-136, W1-134, W1-157 & W1-155. The referenced connections join various radial stiffeners to a111-4 forging. The QA Inspector observed as OIW QC Inspector Steve Barnett performed Magnetic particle Testing (MT) and Visual Inspection (VT) of completed root pass at weld joints referenced above. Mr. Barnett stated that he had located no rejectable indications. The QA Inspector subsequently performed 100% VT & 50% MT verification at the noted locations W1-136 & W1-155 finding the root passes to be in general compliance with contract documents. Please reference TL-6028 report for this date for details. The QA Inspector intermittently observed as welders B61, H4 & B33 deposited SAW passes in the horizontal (2F) position in accordance with approved welding procedure 4016. The QA Inspector noted the OIW welders were maintaining continuous preheat utilizing a torch. Referenced connections W1-136, W1-134 & W1-157 were completed during the swing shift and W1-155 was completed during graveyard shift. The QA Inspector observed OIW QC Inspectors Steve Barnett and Jon Nikolich regularly monitoring and recording the in process SAW parameters during swing and graveyard shift respectively. The QA Inspector also intermittently observed in process welding parameters and determined that the SAW parameters and minimum preheat/interpass temperature appeared to be in general compliance with the contract requirements -- (W1-134: 35 volts, 565 amperes,432mm/min travel speed).

OIW Fabrication Shop-Bay 6
Hinge-K Pipe Beam Fuse Assembly 120A-7:
a124-5 to a124-15
The QA Inspector intermittently observed OIW qualified welder Vincent Vu (WID V7) during in-process welding of Soudotape 316L stainless steel overlay to hinge k pipe beam fuse sub-assembly 120A-7. The weld joint is identified as 316L 3rd Layer. Mr. Vu was observed welding in the flat position utilizing automatic electro slag welding (ESW) overlay process with a .5mm x 60mm Soudotape 316L stainless electrode, filler metal brand Soudotape class EQ316L automatic. An OIW helper was observed assisting welder V7 during ESW activity. The QA Inspector observed OIW QC Inspector Steve Barnett regularly monitoring and recording the in process ESW parameters. The QA Inspector also intermittently observed in process welding parameters and determined that the ESW parameters (1200 amps, 25.2 volts, 267mm/min travel speed) and minimum preheat temperature of 70° F appeared to be in general compliance with the contract requirements and approved OIW Welding Procedure Specification (WPS) 7003. ESW activity was paused at about 2300 hours prior to shift turnover and was not resumed during graveyard shift.

Material, Equipment, and Labor Tracking:
The QA Inspector performed verification of personnel involved with this project and equipment in use. The QA Inspector accounted for 4 OIW production personnel and 2 Quality Control Inspectors present on this date during swing shift. The QA Inspector accounted for 1 OIW production personnel and 1 Quality Control Inspector present on this date during graveyard shift.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)



Summary of Conversations:

As noted in the body of the report.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677 , who represents the Office of Structural Materials for your project.

Inspected By:	Henke,Clete	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer